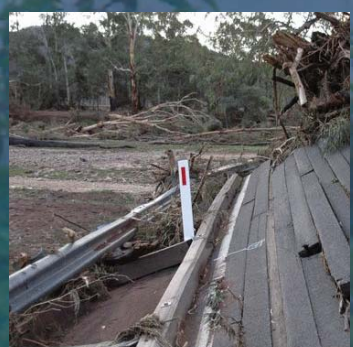
Department of Sustainability and Environment

Gippsland Flood/Storm

Recovery Plan



Parks VICTORIA

A Victorian Government initiative

Victoria The Place To Be

Front cover photos: **Glenmaggie Weir, Flood waters near Paynesville,**
Cheynes Bridge on the Licola Road,
Coastline near McLoughlins Beach.

Published by the Victorian Government Department of Sustainability and Environment & Parks Victoria
Melbourne, April 2008

Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

Printed by The LV Printers

Printed on 100% Recycled paper

ISBN 978-1-74208-296-7 (print format)
ISBN 978-1-74208-293-6 (internet format)
ISBN 978-1-74208-294-3 (cd-rom/pdf format)

For more information contact the DSE Customer Service Centre 136 186
or Parks Victoria Information Centre 131 963

Accessibility
If you would like to receive this publication in an accessible format, such as large print or audio, please telephone 136 186, 1800 122 969 (TTY), or email customer.service@dse.vic.gov.au

This document is also available in PDF format on the Internet at www.dse.vic.gov.au

For more information contact the Parks Victoria Information Centre (ph: 131 963) or DSE Customer Service Centre (ph: 136 186).

CONTENTS

ENDORSEMENTS

The Gippsland Flood/Storm Recovery Plan is an integral component of an overall multi-agency recovery strategy for the storm and flood event of June/July 2007 that followed devastating fires across the Victorian Alps and Gippsland during the summer of 2006/07. The aim of the plan is to assist the process of post flood/storm recovery. It builds upon, and is integrated with, the Great Divide Fire Recovery Plan to ensure the most effective use of resources, particularly in fire and flood overlap areas.

Recovery after the event is about measures that will be taken to assist the recovery of staff, ecosystems and community from the adverse impacts of flood and storms on public land.

The plan details actions across four main themes:

- Visitor Services;
- Natural Values, including catchment and river health;
- Indigenous and Post-settlement Heritage; and
- Community and Tourism recovery.

The engagement of the community in the plan is seen as paramount to the successful recovery of the affected areas.

The plan recognises that the flood affected area is the 'Country' of Gunai-Kurnai, Bidawul, Monero-Ngarigu, Jaimathmathang and Wurundjeri peoples. The Department of Sustainability and Environment (DSE) and Parks Victoria (PV) acknowledge the above indigenous communities as the traditional owners of the affected 'Country'.

The recovery actions and priorities in this plan are approved for implementation.

Approved by:

Neville Penrose
Regional Manager – Gippsland
Department of Sustainability and Environment

Chris Rose
Manager – East Region
Parks Victoria

EXECUTIVE SUMMARY

In the last week of June 2007, Gippsland received record rainfall associated with an intense low pressure system causing widespread flooding and damage inland and along the coast, (refer to Figure 1 for extent of areas affected). On the back of one of the state's worst fire seasons (less than 6 months prior), it had devastating consequences. With both the fire and flood events overlapping, the predicted risks of post fire/flood damage were realised with ash beds and loose topsoil being eroded off the hillsides in a matter of hours. The combined effect of the water, rock, soil and tree debris caused enormous damage.

The Gippsland Flood/Storm Event impacted over 150 km of coastline from Woodside to Cape Conran causing widespread coastal erosion and damage to structures. Five catchments in Gippsland also were affected by flood waters in five major rivers which all recorded major flood peaks. The flood peaks recorded along the Macalister River were the highest on record, estimated to be in the order of a 1 in 100 year event. The severity of the event, in contrast to the extended period for the fires, was largely due to the short, intense nature of the rainfall and storms.

Emergency response

The State Emergency Service (SES) coordinated the immediate emergency response focusing on public welfare and protection of built assets (particularly housing). Parks Victoria and DSE not only established a structure to run in parallel with SES efforts, quickly building a picture of the damage across vast tracts of land, but also worked in conjunction with the SES to offer support with getting local communities back on their feet.

Managing staff well-being was paramount during this time, coming off the back of an exhausting fire season and an impending one only months away. With heavy rain persisting and floodwaters causing a slow but predictable increase in destruction, staff were unavoidably caught up in the emotional effects of damage to both private and public local assets. Staff showed great resolve in supporting the community in a variety of ways. Simple things such as providing access or shifting personal items were most appreciated by the public.

Park and forest areas were closed and staff provided warning signs where appropriate, and where possible mitigated further damage by doing temporary remedial works. As conditions allowed (and with ever increasing intelligence being gathered from the field), a picture emerged that significant damage had occurred and that recovery would be a long and slow process.

The combined impacts of these recent natural disasters in the region are likely to cause ongoing hardship for regional communities. The worst drought in Victoria's recorded history led into one of the most severe bush fires burning more than 1.2 million hectares over a 69 day period, and was followed by a record flood event. Heavy rain in February and November caused additional flood damage particularly through the Macalister River catchment.

For the flora and fauna of the region, the flood and storm event had mixed results with positives coming to wetland birds and some much needed rejuvenation to many parched and drought stricken areas.

The State Government's Flood Recovery Ministerial Taskforce outlined a $60 million response and recovery package and set out both immediate and long term actions to help flood affected communities rebuild their lives. This report committed $10 million of funding to support recovery costs on public land and a further $10 million for the West and East Gippsland Catchment Management Authorities focused on the recovery of river and catchment health.

Direct contact with communities has formed much of the government's response, and this Gippsland Flood/Storm Recovery Plan details the actions to be undertaken to assist community, environmental, heritage and industry recovery in the flood affected region. The plan covers the Latrobe, Thomson, Mitchell, Tambo, Snowy and parts of the East Gippsland basins. The actions include $6.6 million for restoring visitor services, including the re-opening of key tracks and visitor sites by Christmas 2007, $1,300,000 for the restoration and protection of fragile ecosystems and species, $10,000,000 on the restoration of rivers and streams as well as $300,000 for indigenous and post settlement heritage recovery projects.

To ensure that flood recovery properly meets the needs of flood affected communities, the recovery initiatives announced in this report will be implemented predominantly by DSE and Parks Victoria, who will work with local and regional recovery committees. Importantly, this plan details initiatives to ensure that communities maintain involvement in the recovery process.

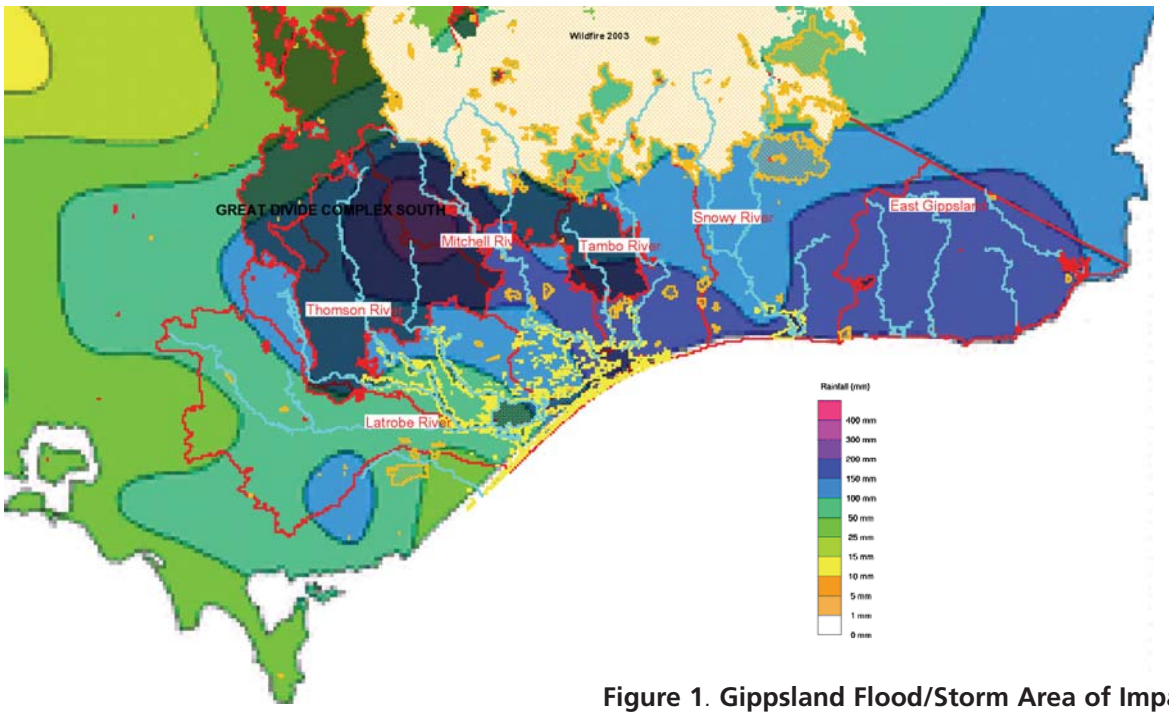


Figure 1. Gippsland Flood/Storm Area of Impact

1. INTRODUCTION

Victoria's climate can vary greatly and the state has known many extreme events from drought to fire and flood. Rarely however, is one region affected by all three extremes in the space of 12 months.

In the last week of June 2007, an intense low pressure system developed in eastern Bass Strait, followed by the formation of another intense low off the New South Wales coast which combined to produce heavy rain and storms in Gippsland peaking over a three day period. Mt Wellington was the epicentre of the event receiving record rainfall exceeding 300 mm in one day. There was a compounding impact with much of the area already saturated by rain and little vegetation cover through the burnt areas.

Along the coast, severe weather and high tides further exacerbated the situation by restricting the flood waters escaping from the Gippsland Lakes system. The Gippsland storm event affected over 150 km of coastline from Woodside to Cape Conran, causing widespread coastal erosion and damage to structures. Muddied river water deposited huge volumes of sediment into the Gippsland Lakes and out to the ocean through the channel at Lakes Entrance. The channel itself was gouged out to its deepest level in years.

Five basins in Gippsland (Latrobe, Thomson, Mitchell, Tambo and Snowy) were affected by flood waters. Within these basins five major rivers all recorded major flood peaks (refer to Figure 2 and Appendix 1 for further details). The Latrobe River at Traralgon reached a major peak level rated at a 1 in 16 year event, rising to 4.83 m. The Avon, Thomson and Macalister Rivers all hit major flood peaks. The flood peaks recorded along the Macalister River were the largest on record, estimated to be in the order of 1 in 100 year event. The peaks were 2 m above the major flood level and washed away the Licola River gauge. The Mitchell River also received major flooding in the vicinity of a 1 in 80 year event and reaches of the Snowy River also hit major flood heights. The severity of the event, in contrast to the extended period for the fires, was largely due to the short, intense nature of the rainfall and storms.

Many properties along the flooded rivers saw topsoil and large sections of river banks disappear as high velocity water formed new courses. Further downstream the low lying areas, properties and towns around the lakes were inundated by turbid, silt-laden flood water causing damage to homes, business and public infrastructure.

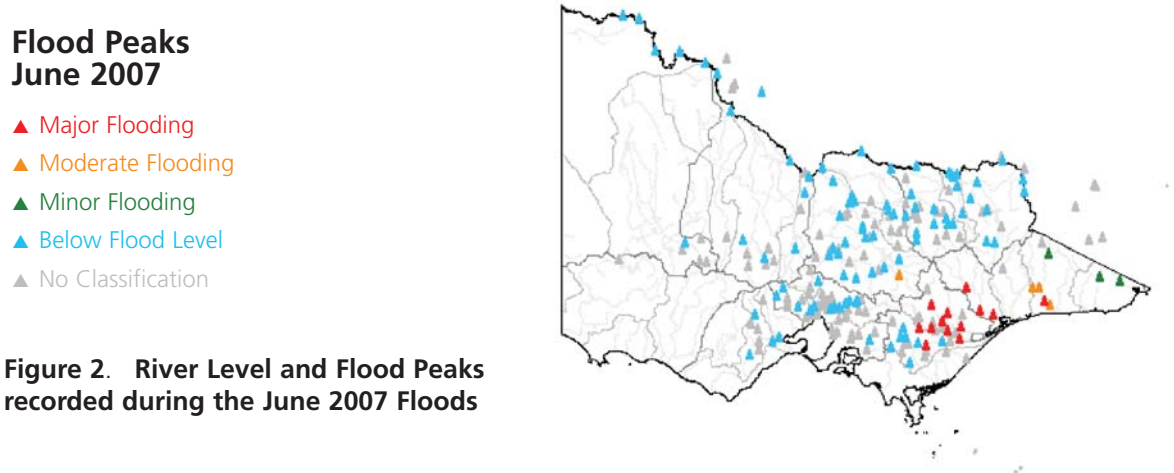


Figure 2. River Level and Flood Peaks recorded during the June 2007 Floods

1.1 STRATEGIES, OBJECTIVES AND SCOPE OF THE PLAN

The scale and intensity of these floods have significant implications for biodiversity, water resources, regional communities, indigenous and post-settlement cultural values, industry and public infrastructure within the flood affected area. Appropriate actions to assist the recovery of these values will support the recovery of the region as a whole.

The Gippsland Flood/Storm Recovery Plan describes the key actions to be undertaken for the timely post flood recovery of the range of values and uses within the flood affected areas. The plan covers areas of the Latrobe, Thomson, Mitchell, Tambo, Snowy and small sections of the East Gippsland Basins. The plan is intended to provide guidance for government agencies and to other interested parties within the more detailed planning for the flood affected area over a one year recovery program to 30 June 2008.

The plan outlines a range of immediate and longer term measures to address the damage caused by the flood and storm event to built assets and visitor services. DSE and PV are insured through the Victorian Managed Insurance Authority (VMIA) which will contribute towards replacement of some assets.

The plan also outlines programs to help address the impacts on natural, historic and indigenous cultural sites. The focus on these works will be to treat ongoing threats to their recovery or stabilisation.

Four themes are used throughout this plan, reflecting the focus areas for flood recovery:

- Visitor Services;
- Natural Values, including catchment and river health;
- Indigenous and Post-settlement Heritage; and
- Supporting Community and Tourism.

The plan also highlights the important role of communications and community engagement across all themes.

The key objectives of the Gippsland Flood/Storm Recovery Plan are:

- To ensure staff and visitor safety, conserve natural and cultural values and protect water quality;
- To plan and implement all flood recovery activities within approved management directions for public land, as set out in various park/forest management plans;
- To recognise the rights and aspirations of traditional owners and their primacy to speak for 'Country';
- To restore emergency access and where possible enhance risk mitigation and capacity for future emergency management;
- To minimise disruption to public access and the full range of commercial operations and authorised uses that depend on the park/forest;
- To ensure efficient allocation and use of resources invested in the flood recovery effort; and
- To promote awareness within the wider community of the recovery program, its objectives and outcomes.

1.2 GOVERNANCE

Planning and implementation of works will be carried out in accordance with the relevant legislation. Regulations, guidelines and codes of practice that apply to the management of public land are addressed in Appendix 2.

Flood recovery is presently being managed through the following governance structure, (refer Figure 3 below). The development of the Gippsland Flood/Storm Recovery plan is tenure blind, but each element of the plan is reportable by land tenure through DSE region and Parks Victoria district. This structure will be reviewed and adjusted as necessary.

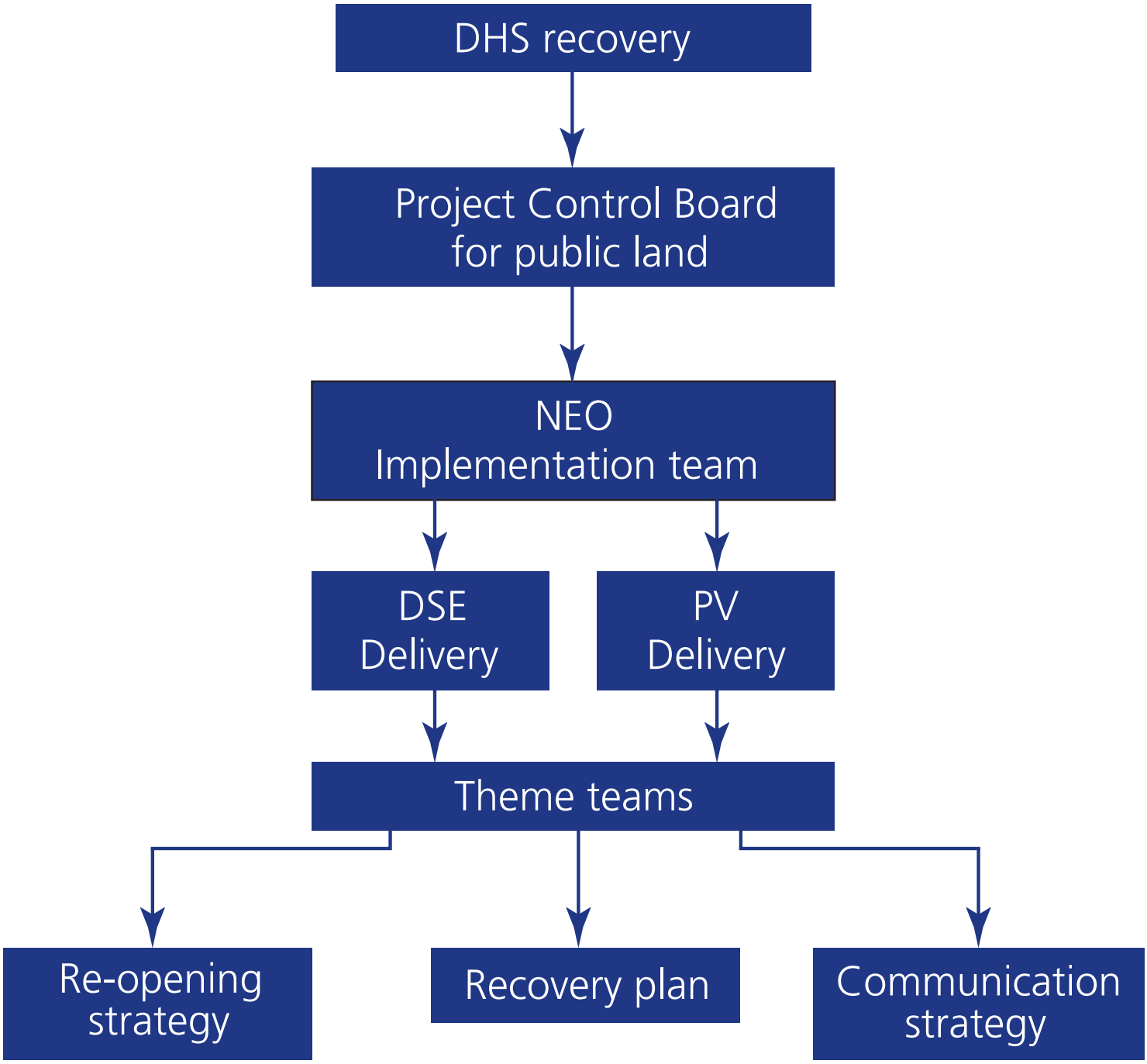


Figure 3. Governance Arrangements

2. FLOOD RECOVERY

This Gippsland Flood/Storm Recovery Plan (the Plan) has been developed along similar lines to the Great Divide Fire Recovery Plan, (DSE & PV, 2008), (due to the similar nature of the recovery and overlap of affected areas), and in accordance with the Code of Practice for Fire Management on Public Land, (DSE 2006a).

The Plan outlines a range of immediate and longer term measures to assist in the recovery from the severe impacts of the flood and storm event. The recovery themes include:

- Visitor Services;
- Natural Values, including catchment and river health;
- Indigenous and Post-settlement Heritage; and
- Supporting Community and Tourism.

RECOVERY AND REHABILITATION

Recovery is the post-emergency phase that establishes the processes of assisting individuals and communities to manage the re-establishment of those elements of society necessary for their wellbeing.

This process involves co-operation between all levels of government, non-government organisations, community agencies and the private sector in consideration of the environmental, economic, social and built environment impacts.

Where projects have been proposed but not funded through the recovery process, their implementation will form part of DSE and Parks Victoria's normal business processes wherever possible.

AN ASSET AND RISK BASED APPROACH TO FLOOD RECOVERY

The flood affected area contains a large amount of ecological, indigenous, heritage and visitor assets, and a systematic approach has been employed to determine the priorities for flood recovery. The number and type of assets have been assessed using spatial analyses and local knowledge. The likely impact of the floods on these has been identified where possible using flood severity mapping, knowledge of the response of these values to flood, previous research and extensive on-ground assessments once access to the areas became available.

A risk based approach has been employed to assess the risk to assets and visitor safety that may have changed as a consequence of the floods.

This concept has several features that contribute to effective decision making, including a basis for comparing, ranking and prioritising risks for further assessment and management. It is particularly useful when dealing with multiple values and threats across large geographic areas, and uses an explicit determination of the level of uncertainty or degree of confidence in the assessment.

Uncertainty estimates are especially important when dealing with multiple stressors, limited data and knowledge of outcomes as new information can be included in the risk assessment to improve and streamline future decision making. This is consistent with adaptive management principles.

The risk assessment approach helps prioritise hazards and assets for further assessment and management. To what extent an identified risk is treated requires careful consideration of:

- Operation and technical feasibility of reducing the risk;
- Costs and cost-effectiveness;
- Legal requirements;
- Effectiveness of management actions in reducing the environmental impact; and
- Impact of management actions on other value groups.

In many cases, this may include a more detailed risk assessment.

Re-opening visitor sites to the public

Re-opening visitor sites for recreation, public and commercial access is a priority action. The comprehensive asset assessment procedure ensures that the damage is documented, risks identified providing a basis for the strategic re-opening of the flood and storm affected areas.

There are also many roads in the flood affected area that are part of the seasonal road closure program. Seasonally closed roads will be re-opened as normal but delays are to be expected as a result of the flood damage.

The access re-opening strategy is focused on getting priority areas open by key holiday dates.
The agreed strategy has been placed on ParkWeb (www.parkweb.vic.gov.au) and is updated monthly.

Conditional access for Licensed Tour Operators has been provided where roads and tracks have been made safe but signage and facility repair is not yet adequate for full public access.

Re-opening is progressing well, and by Christmas 2007 most visitor sites should be reopened to the public. 4WD Victoria has assisted Parks Victoria's normal workforce by mobilising club volunteers on weekends,

2.1 Visitor Services

The Gippsland flood area includes a number of iconic recreation sites such as the Gippsland Lakes, Buchan Caves, Snowy River, Mitchell River and Ninety Mile Beach coastline. The infrastructure base consists of nearly 700 assets including a diverse road network, walking trails, bridges and other visitor facilities such as toilets, shelters, lookouts, camping and day use visitor areas. Determining the full extent of the loss or damage caused by flood is an ongoing priority.

Access to visitor sites, roads and tracks is important for recreation users, the community and those that use the area as part of their business.

The fire and flood events physically closed many parks and forests and delayed access for the damage assessments and repair.

2.1.1 Ensuring visitor safety whilst rapidly restoring access

DSE and Parks Victoria are extremely mindful of the need to restore access to flood affected areas as quickly as possible to assist with regional economic and social recovery. Both agencies are also equally conscious of the requirement to provide for public safety and welfare. Some of the safety issues associated with post flood environments include the presence of hazardous trees, elevated risk of land slips, damaged road and trail surfaces, damaged or absent bridges, signs or structures and further risks of flash flooding after rain. These risks are managed through temporary access closures and notifications, a strict regime of hazard assessment and control, and a formalised re-opening process.

2.1.2 Asset assessment

A comprehensive assessment of damaged assets has been conducted for all public roads, walking tracks, port facilities and visitor facilities in the flood and storm affected areas. These assessments were undertaken as soon as it was safe and practical to access areas of public land, and form a basis for identifying insurable works, the re-opening strategy and prioritising further work.

2.1.3 Access Re-opening Strategy

The prioritisation of public land access re-opening efforts is governed by a comprehensive re-opening strategy which has been developed in consultation with relevant agency representatives and key community stakeholders. Asset and field assessments (including risk assessment) are undertaken in accordance with recognised priorities with the aim of restoring access to recreation sites, roads, tracks and walking tracks by specified deadlines such as Melbourne Cup Day, Christmas and other holiday periods. Along with recreation priorities are a number of key priorities for logging, mining and other uses primarily on the DSE State forest estate. The strategy is available on the Parks Victoria website (www.parks.vic.gov.au) and key milestones are communicated through the media prior to holiday periods.

2.1.4 Addressing threats to visitor safety – specialist advice and assessment

The contribution of specialists (such as engineers) for the assessment of built assets such as bridges, roads and elevated structures will play an important role in the proper analysis of the post flood environment and appropriate management responses. The full extent of the damage will take time to assess, due to the loss of bridges and trees fallen over roads preventing access to assess the damage, and availability of specialists.

Tree hazard assessment

The management of tree risk after storm and flood events is a large and complex task which is governed by detailed guidelines. The process requires identification and treatment of all trees that represent a clear danger to visitors, with more intensive assessment by arborists at higher risk locations such as major visitor sites, roads and locations where visitors are stationary for extended periods of time. This approach is consistent with the likelihood versus consequence principle of risk management, (Standards Australia Ltd, 2004a).

Roads and associated infrastructure

The majority of damage to road surfaces and associated infrastructure from the floods is likely to be covered by insurance. The key factors not covered by insurance are removal of debris such as fallen trees, rock and soil from roads and drains. This was highly significant.

Whilst there has been extensive road damage requiring major reconstruction in a number of locations, the majority of recovery work is clearing roads of fallen trees, clearing blocked drains and grading to reform and resurface the roads. In the areas of inundation downstream, works to re-open roads were undertaken quickly once waters had receded and the impacts were less severe with reduced water velocities.

As predicted, the more serious roading and drainage issues arose after the fire event when slopes that were previously stripped of all vegetation developed rapid water runoff after rainfall. The increased water velocity mobilised soils and debris which were deposited on roads, and in culverts and table drains. These combinations caused serious road damage and often the total loss of road formation.

The most severe example of this was the Tamboritha Road where culverts and drainage became blocked by rocks and vegetation. High velocity flood waters cut into banks resulting in erosion of whole sections of road, bridges washed away and road surfaces stripped. The Tamboritha Road was closed immediately for a second time after the fires. A major engineering design and construction project will now be implemented to restore this critical recreation, public and emergency access route into the Victorian High Country.

A number of road bridges damaged in the flood area were constructed from timber. Australian standards now require bridges to be replaced with concrete structures, and any new bridges to conform to this standard, (Standards Australia, 2004). In addition, many smaller stream crossings were constructed during the early post war period using a technique known as 'log fill crossings'. This construction method involved filling usually minor to mid size watercourses using logs sourced locally. The logs were laid parallel with the stream flow and acted like a culvert and were capable of supporting vehicles and machinery. Whilst many of these crossings were at or approaching the end of their useful life, the flood is reported to have destroyed or hastened their demise. In some cases the location of a log fill has only been detected after the flood due to road collapse or failure of drainage under the road. Log fills were also used to simply fill in gullies during road construction. There are a number that have been wholly or partially undermined and will be replaced with modern structures.

In the case of more contemporary pipe culverts, it is critical that these be cleaned and maintained on a regular basis following the flood. There is, and will continue to be, significant sediment movement after the flood until such time as vegetation re-establishes. This is expected to increase maintenance significantly, especially immediately after rain. If the culverts become blocked, water can quickly undermine the pipe or remove it completely, leading to sometimes serious road/track damage. Road signs often provide essential traffic safety advice, distance and/or orientation information. Thorough replacement of all required signage is a high priority project and absence of required safety signs on roads and tracks will necessitate closure until rectified.

Walking tracks

Many walking tracks covering hundreds of kilometres, track structures (railings, steps, boardwalks, bridges, etc), signs and drainage structures were damaged in the flood. Multi-use, recreational rail trails that are managed by Committees of Management) also require assessment of debris and damage to surfaces and infrastructure.

The issues associated with walking tracks are similar to those of roads and focus on four areas of concern (fallen vegetation, track surfaces, structures and drainage). Collapsed trees and debris are the most common problem associated with the storm event. Significant scouring of tracks from high velocity waters is also prevalent and in some cases, so is the total loss of track formation. A small number of walking track structures were affected, with the most significant around the Sale Common wetlands. In all cases where damage occurred, the intensity of the event was greater than the drainage could handle.

Recovery work will focus on clearing tracks and reinstating drainage and track surfaces to avoid further loss and damage. Difficulties with access and logistics can mean that completion of some reconstruction efforts may take a number of years.

Lookouts and elevated structures

Four lookout structures have been reported as damaged. Lookouts and elevated structures may be a destination, or form part of an existing facility such as a walking track, camping or day visitor site. The impacts of flood can in some cases require extensive clean up operations and technical or geotechnical inspection. Further damage was sustained in the heavy rainfall and flooding over the Melbourne Cup long weekend.

Recovery work will focus on clearing the assets of debris and restoring the structural integrity of the elevated structures.

Buildings and other structures

Buildings and other structures damaged in the flood and storm include a bird hide, picnic shelters, toilets, fences, seats, tables, BBQs, fireplaces, bins, signs and water tanks. Determining and recording the extent of loss or damage is an ongoing priority as this data will enable a progressively well-planned, refined and prioritised reconstruction phase.

Beach access along the Ninety Mile Beach was cut at many popular sites such as Seaspray. The Seaspray Surf Life Saving clubhouse was also put at risk due to severe dune erosion. Planning is required to determine the most appropriate replacement structure.

Crown Land reserves and halls under the responsibility of over 40 DSE Committees of Management require assessment of reported damage and prompt processing of restoration works. Over 30 km of river frontage fencing is required and is under way. Assessment of sea walls/breakwaters is required to determine the extent of damage and repair costs. Shoreline erosion at four major sites requires assessment of damage, threat to assets and hazard minimisation for swimmers and boaters.

Water quality

Untreated water (ie creeks, bore water) can lead to illnesses including gastroenteritis. The flood/storm event may have further compromised water quality through sedimentation and contamination from other sources. Although Parks Victoria is responsible for providing potable water to several locations in accordance with the *Safe Drinking Water Act* 2003, it does not provide any water supplies in the flood affected regions. Advice on the use of water sources in these areas is directed by the Department of Human Services.

OBJECTIVES AND STRATEGIES

Restore visitor access

- Provide public access to major visitor sites by Christmas 2007 and to the walking track network by 30 June 2008.
- Re-establish permanent road network by 30 June 2008.
- Communicate the reopening strategy to general community, key stakeholders and relevant government authorities by 1 November 2007.

Repair or replace visitor facilities, recreational and tourist built assets

- Clear debris, restore sites and replace assets in accordance with sustainability principles and relevant standards by 30 June 2008.
- Review the design and location of visitor facilities that need to be replaced to ensure they meet current needs and standards.

2.2 Natural Values

Government agencies recognise that maintaining environmental services and biodiversity is fundamental to the quality of life and economic well-being of affected communities. Protecting and rehabilitating fragile ecosystems and species that have been placed under additional threat by the floods is a major priority of ecological flood recovery. Whilst flood and storms are a natural occurrence, particular attention will be paid to managing the post flood and storm risks and potential negative consequences for biodiversity.

Floods and storms are natural events in most of the wildlife habitats of south-eastern Australia and most species have adaptations that enable them to recover. Flood is important in renewing natural cycles that support the health of flora and fauna populations.

2.2.1 Fire and Flood

The recovery situation is dramatically compromised in the fire affected area. Years of drought has kept the region dry and possibly limited the regenerative capacity of the environment. Rain was one of the keys to recovery providing the moisture for plant growth. The biota in the fire affected area had already commenced its natural regeneration processes including re-sprouting from rootstocks and stems, and seed germination, with native wildlife beginning their re-population. The recovery however, is not immediate and the floods have caused further delay and difficulty and are likely to change the structure of rejuvenation. Programs in the fire recovery program will need to adapt to the consequence of the floods and flood specific programs will further complement these works.

Some vegetation types and species can be at risk from flood, particularly where the flood intensity is high. Flood is a major disturbance causing erosion and siltation that can provide opportunities for introduced species to invade, and rivers to be clogged and deoxygenated affecting aquatic species.

Some species may be at increased risk due to their already precarious situation before the floods (eg low population levels and recovery from fire), and the post flood effects of disturbance in altering predator/competitor relationships and other environmental factors. However, this is not always the case as some native species respond very positively to flood.

This Plan has been developed using an asset and risk assessment framework that utilises the available spatial data and expert and local knowledge to identify priorities for management. That is, high value assets at high risk will receive priority for management. Consideration has also been given to the potential risks associated with new and emerging threats and to the urgency of recovery action. Actions to address urgent issues have already, or will be undertaken as soon as it is safe to do so. For example, a population of Barred Galaxias was transferred to captivity as a backup to the wild population after the fires. These are gradually being reintroduced as their stream habitat recovers.

Natural values are intrinsically part of Victoria's indigenous heritage and the obligations of the traditional owners to speak and care for 'Country' will be recognised in how agencies manage these values and establish relationships with communities.

The changes after the floods (and particularly in the area also burnt), will occur over many years and will be closely monitored, and assisted where appropriate, by the general and scientific communities to reduce the competing interests of pest plants and animals and other deleterious effects.

2.2.2 Coastal Aspects

During the flood and storm event, the coast saw significant damage through high seas, large swells, tidal variation and winds. The ocean cut into foredunes and sand spits moving enormous volumes of sand. Whilst no threatened flora was under direct threat, the habitat for fauna changed significantly with the removal of many breeding areas. The recovery of coastal morphology will be closely monitored to determine whether breeding environments have returned. There may need to be interventions to provide opportunities for shore birds breeding and limiting the disturbance to these areas.

2.2.3 Protecting fragile ecosystems and rare or threatened species

ECOLOGICAL VEGETATION CLASSES

Native vegetation in Victoria has been classified into Ecological Vegetation Classes (EVCs). Of the approximately 300 EVCs described in Victoria, 92 occur within the flood affected area. Of these, 63 have conservation significance within their bioregion. A number of vegetation communities listed under the *Flora and Fauna Guarantee* (FFG) *Act* 1988 also occur within the flood/erosion zone.

The frequency, intensity and seasonality of floods will affect the response of vegetation communities in addition to other contributing factors such as prior fire events, drought and topographical and hydrological components of the landscape. Many vegetation communities in the flood affected area are flood tolerant (eg Riparian Forests) and will not only survive but thrive after an event. However, the intensity of the flood and type of impact, erosion or deposition varies from the head of the catchments to the ocean outfall.

Priority vegetation communities have been assessed from knowledge of their distribution, ecological requirements and response to floods, and this process identified several at risk. Six threatened EVCs in the flood affected basins were also burnt in the 06/07 fire event. Some 35% of Sub-alpine Grassland and Sub-alpine Shrubland communities were scorched leaving them vulnerable to the impacts of flood related erosion and sedimentation.

There are a number of other threatened EVCs with high representation in the basins affected by flood erosion and inundation. The Dry Rainforest/Warm Temperate Rainforest/Gallery Rainforest/Riparian Shrubland/Riverine Escarpment Scrub/Blackthorn Scrub Complex covering 80% of the state's population in the basins was almost completely (88%) inundated.

Over 60% of the endangered Sandy Flood Scrub occurs in the basins, with 93% of that in the flood/erosion zone and 40% of the Gallery Rainforest occurs in the basins of which 92% is in the flood/erosion zone.

The Swamp Scrub/Warm Temperate Rainforest/Billabong Wetland Mosaic has a 68% representation in the flood basins with 69% in the priority flood impact area. The Dry Valley Forest/Swamp Scrub/Warm Temperate Rainforest Mosaic has a 40% representation in the flood basins with 63% in the priority flood impact area.

Some EVCs are considered to be a particular priority for their provision of habitat for rare and threatened fauna and flora species, and their importance for the delivery of ecosystem services such as maintenance of flow and water quality. Other vegetation communities are considered priorities because of their vulnerability to infestation of weeds and exposure to grazing pressure through the disturbance from flood and particularly when combined with fire.

FLORA

Analysis of data entered in the Victorian Flora Information System (FIS) since 1970 indicates that the flood/storm area contains at least 686 threatened flora species, of which 373 species occur in the erosion/inundation zone. This includes 49 species listed under the *Environment Protection and Biodiversity Conservation* (EPBC) *Act* 1999 and 77 species listed under the *Flora and Fauna Guarantee* (FFG) *Act* 1988. Many flora species within the flood affected area will not have been adversely affected by the flood due to their lifeform and resilience to flood and storm activity. However, the post flood recovery of flora species is dependent on the extent of initial damage, a lack of competition from weeds, further disturbance events, grazing pressure by native and exotic animals and changes in hydrology or nutrient loads.

Analyses based on the geographic extent of these populations within the flood affected area, their conservation significance and response to flood (where known) has been used to develop a priority list of flora for further investigation and risk mitigation.

FAUNA

Analysis of data entered in the Victorian Wildlife database since 1970 suggests that the flood affected area contains at least 110 threatened birds, amphibians, reptiles, mammals, aquatic and terrestrial invertebrates and fish. In the focused area of riparian erosion and inundation 10 species are listed under the EPBC Act and 34 species listed under the FFG Act.

Many of the known threatened species are birds. This is partly a consequence of greater survey effort and their higher visibility relative to other fauna groups. However this group is more likely to be able to cope with significant initial disturbance and in many instances take advantage of the event in the long term. Key bird species of concern are the coastal species where beach, sand spits, islands, flats forming their breeding habitats were eroded, inundated, reformed or altered. The risk to breeding was reduced due to the out of season timing of the flood/storm event leaving some scope for the natural restoration of habitat in the lead up to summer. This allows these species to search for alternative habitat that may have become available or re-shaped through the event. The key species affected in this area are the Hooded Plover, Little Tern, Fairy Tern and Caspian Tern.

Mammals and reptiles were most likely affected to a lesser extent with the erosion and inundation areas forming less of their habitat. The threatened Eastern Horseshoe Bat has a high proportion of records from the area and is known to use caves and mine shafts. There is a possibility that some shafts and caves could have been flooded with 15% of records appearing in the flood and inundation zone.

Smoky Mice also have a high percentage of records approaching 50% from the flood affected basins. Their habitat is generally not along riparian corridors, however the combined affect of fires, flood damage and post disturbance grazing reduces their intact habitat and potentially exposes them to greater predation.

Swamp Skinks (26% in affected basins), are likely to occur around lake margins. The floods are likely to have caused habitat changes for these species although only 1% were recorded in the flood and inundation zone.

The key threatened species at risk from the flood event are those that were not able to move out of the way of the flood waters, including fish, amphibians and water based crustaceans.

Dwarf and Mountain Galaxias primarily inhabit stream areas similar to those that exist in Gippsland, although records for these species appear to be low for the region (less than 5%). However considering their vulnerability to the type of disturbance and conservation status (FFG listed) they are important species for further evaluation.

The FFG listed Australian Grayling has more than 40% of its known population in the affected basins. Its habitat has been severely affected by the floods through de-oxygenation and sedimentation of streams and changed in-stream habitat.

Cox and Empire Gudgeon both have low numbers of total records and are likely to be at risk. Further investigation of these species habitat and population requirements may indicate the degree of impact that the flood/storm event had on them.

Alpine Tree Frogs and Spotted Tree Frogs inhabit the riparian areas likely to be impacted by the flood waters. The Alpine Tree Frog has half its population in the affected basins. The Southern Barred Frog occurs at the less severe eastern extent of flood/storm event but very low number of records (2 state-wide), make it worthy of further investigation.

The Alpine Spiny Crayfish and Orbost Spiny Crayfish have a high percentage (20% and 25% respectively) occurring in the flood zones. With a low number of state-wide records (less than 10), these species are vulnerable to impacts.

Analyses based on the extent of known fauna populations within the flood affected area and their conservation significance has been used to develop a priority list of fauna for further investigation and management. The risk assessment process has been used to look at the likelihood and consequence of threats to those species as a result of the flood and storm event.

WEEDS AND PEST ANIMALS

Management of weeds and pest animals on public land and at the interface with private land can contribute indirectly to recovery of adjacent landholders and communities and this will be a priority for the program. Management of pest plants and animals will also focus on invasive and flood sensitive weeds and protecting high value natural assets from pest plant and animals.

Ecological values will be protected by targeting those pest plants and animals that pose the highest level of risk. Where possible, management will be integrated into existing pest control programs that are of an appropriate scale and duration.

2.2.4 Threats to the post flood recovery of natural values

Flood is an integral part of the Australian environment, but several threatening processes may affect the ability of these natural values to recover to their pre-flood condition. Identifying the threats and assessing their associated risk helps determine priorities for on ground works. GIS spatial analysis and expert knowledge were used at a risk assessment workshop, which identified several key threatening processes to be addressed. Some of these threats will act in isolation, while others (such as climate change and the prevailing drought in south-eastern Australia) may interact to exacerbate the flood impact. While there is limited scope to manage some threats such as loss of habitat and food resources for fauna, there is scope to ameliorate other potential threats such as increased predation by pest animals and pest plant competition in regenerating habitats.

Compounding threatening events including fire and flood

The threat to post-flood recovery of natural values is most prominent in areas that were burnt in 2006/07 fires and subsequently flooded. The short timeframe between the two events limited the ability of vegetation and fauna to recover properly from the fire event. Whilst fires cleared much of the landscape of protective vegetation, the heavy rain, floods and storms then caused landscape scale movement of soil, seedbanks and regenerating biomass down the catchment.

Increase or establishment of new and existing weeds and pathogens

Experience has shown that weeds and pests can thrive post natural disasters in affected areas. For example, following the 2003 fires, Grey Willow seedlings appeared in their thousands in fire affected alpine mossbeds. Weed seeds and other propagules can travel long distances down catchments dropping out along the entire length of streams and rivers where eddies create slow moving water at the banks. The reduced competition and the increased nutrient and light conditions favour species adapted to colonising disturbed areas.

Winds associated with the storm, animal movements and human activities are all additional methods for weed spread. Some plant pests will flourish initially due to their life history strategies but then decline as the original native vegetation re-establishes its influence.

Interim guidelines and procedures for managing the environmental impacts of weeds on public land outline the key priorities for dealing with weeds. These guidelines give highest priority to new and emerging species, including 'sleeper' weeds. An asset-based approach to established weeds is taken. Thus it will be necessary to undertake surveillance to identify new weed occurrences and to target known new and emerging species. Important areas for biodiversity conservation will be a focus for management to prevent the impacts of established weeds.

Increased grazing and trampling pressure by pest animals

Following the flood, there may also be increased grazing and trampling pressure on fragile alpine, sub-alpine and riparian vegetation communities from rabbits, feral goats and wild pigs. Areas above 1,200 metres and on steep slopes are particularly vulnerable to trampling pressure.

Cattle grazing in licensed areas

The staged resumption of grazing to licence areas in State forest and river frontages is important to facilitate this ongoing forest use and support local communities. The key issue for grazing and flood recovery is ensuring ecosystems have recovered from the impacts of floods so grazing by cattle can occur on a sustainable basis with minimal negative impacts on flora, fauna, soils, water quality and commercial timber species.

The impacts of cattle in licensed areas, particularly in combined fire and flood areas, may increase as a consequence of decreased vegetation cover, soil stability and increased access.

An assessment of each licence affected by flood in combination with fire assessments will be required to determine flood impacts and recovery status. The program will build on the ongoing, robust and objective assessment program established after the 2006/07 fires. Licences subject to major flood peaks and/or containing sensitive vegetation types, may require no grazing for multiple seasons before the landscape and vegetation has sufficiently recovered. In other situations the areas previously available for grazing may have been permanently altered by stream erosion and these licences need to be assessed and adjusted accordingly.

Increased erosion and sedimentation

Three agents are involved in erosion in the flood affected area: frost heave, wind and water. The extent to which soils are eroded depends on the stocking rate of livestock, intensity of rainfall, soil moisture content, rate of infiltration, vegetation cover and type, rainfall intensity and slope. Soils in montane forests are more permeable and less prone to erosion than the higher sub-alpine zone, and recently burnt snow gum communities and snowgrass communities are worse-affected. In particular, vegetation communities such as Alpine Bogs are likely to be particularly impacted by sedimentation. As the snow season was yet to bed down at the time of the flood and provide a protective cover, the saturated soils particularly in bare and steep areas were scoured away to bedrock.

Habitat fragmentation, change in habitat availability and loss of food resources

While some fauna species may benefit in the short to mid term from changes caused by floods (eg the wetland birds responding to favourable breeding situation), others such as small ground dwelling mammals and reptiles that inhabit riparian areas may take longer to recover from loss of habitat and food resources.
In-stream species of fish and amphibians that were not able to avoid the flooding were at significant risk of complete extinction in the more disturbed areas with eutrophication and sedimentation of aquatic habitats. Decreased population sizes may also result in loss of genetic diversity, particularly for threatened species.

Increased predation by pest animals

Pest animals may extend their range into the flood area and have increased access as a consequence of the loss of vegetation cover and changes to riparian habitats. For example, Australasian Bittern that gained shelter from foxes in dense habitat along wetland margins may now be exposed to predation. Predator control will be focused at sites where habitat has been severely damaged by the floods, where species are most threatened and along the public/private land interface to protect stock on private land. Pest animals may also affect native fauna by competing for habitat and food resources.

Visitor access

Visitor access has generally been restricted as a result of the flood. The staged re-opening of visitor areas will be to a degree in line with the recovery of habitat. Crossings of rivers by vehicles, horses and walkers will need to be monitored to limit further in-stream disturbance affecting amphibians and fish.

In coastal areas, changes to sand spits and shore areas may have reduced the available areas for breeding birds over the summer. These areas will need to be closely monitored and visitor access restricted to limit disturbance.

OBJECTIVES AND STRATEGIES

Protect high value biodiversity assets from high to extreme risks (mitigate risks)

- Assess high priority fauna populations at risk of local extinction habitat by 30 June 2008 and implement remedial work.
- Assess high priority flora populations at risk of local extinction from reduced reproduction and competition with pest plants and grazing; implement remedial work.
- Reduce immediate negative impacts on high value ecosystems by 30 June 2008.

Improve understanding of the impact of the flood and storm event on biodiversity (monitor risk)

- Impacts of flood and storms on key populations and/or habitat of flora and aquatic organisms, amphibians, mammals and reptiles assessed by 30 June 2008.

Minimise the risk associated with established and new and emerging weeds (reduce risk)

- Identify key priorities for dealing with weeds, and prioritise high value habitats and vegetation communities for weed control by 30 June 2008.

Minimise the risk associated with predators and introduced grazers on high value fauna and flora (reduce risk)

- Reduce immediate negative impacts on high value fauna and flora through pest animal control by 30 June 2008.

Minimise pest plants and animals along the public/private land interface (reduce risk)

- Work in partnership with adjacent landholders to undertake predator control and to identify and control weed sources on public land by 30 June 2008.

2.3 Protection of catchments and waterways

The State Government has announced funding of $10 million over two years for the protection of catchments and waterways. This funding will be allocated to the East Gippsland (EGCMA) and West Gippsland (WGCMA) Catchment Management Authorities (CMAs) on the basis of need, taking into account the flood-affected area within each CMA's region. The CMAs have completed a combined report, (EG & WG CMAs, 2007) that highlights some of the impacts, issues and remedial options to respond to the flood event.

Flood severity mapping

The 2007 flood event has highlighted the opportunity to strengthen flood data knowledge and warning systems across the region particularly with respect to the Gippsland Lakes. The CMAs have carried out some extensive post flood mapping to define the boundary of flood waters. A further objective of the CMAs is to:

- Complete flood extent data collection and mapping for Gippsland Rivers and Gippsland Lakes Townships;
- Install and upgrade improved Flood Warning Systems in Gippsland's rivers and lakes; and
- Create a decision support tool that would use real time information on rivers, wind, rainfall and atmospheric pressure to predict flood levels around the lakes system.

The Gippsland area is important for the provision of water for agriculture and domestic use. For example, Lake Glenmaggie supplies water to the Macalister Irrigation District and is the source of urban water supplies for several surrounding towns. In addition, large areas of the Thomson River catchment were burnt during the 06/07 fires. The flood affected area includes a number of high priority river reaches and important habitat for aquatic plants and animals including heritage rivers. The Gippsland area is also important for the maintenance of flow for downstream aquatic environments such as the Gippsland Lakes and Mitchell and Lower Ovens Heritage Areas. Many of the east Gippsland and north east catchments were also burnt in the 2003 bushfires.

In the short to medium term, the loss of vegetation from the steep mountain slopes and ridges of the fire affected areas has resulted in increased run-off and flooding of waterways. This response was predicted and was one of the key issues being dealt with in the post fire rehabilitation of exposed control lines. The brief amount of time between the major fire event and the floods provided little opportunity for broad scale recovery of vegetation and natural soil stabilisation. As in previous floods, this major flooding event has been exacerbated by the build up of debris (fallen trees, partly-burnt timber) and sediment from the erosion of exposed soils, such as those experienced in the Macalister River catchment, (EG & WG CMAs, 2007).

The recovery of our catchments and waterways is highly dependent on the area's vegetation regenerating to stabilise soils and filter and moderate the speed at which rainfall runs into the region's rivers. If rainfall is relatively gentle, then regeneration of currently bare ground will help to hold soil in place. More intense rainfall, particularly in areas where the fires burnt with greater intensity, will lead to significant erosion and further problems downstream.

Given the extent of the floods and the nature of the country that was burnt, there is little that can be done to manage problems at their source. Rather, there will be a continuing need over the coming years to respond to issues following rainfall events in the Great Dividing Range. The ability to limit further fire events in the catchments over the next 3-5 years will be critical to allow for significant regeneration. The main impacts on catchments and waterways are discussed below.

Altered flow regimes and water yields

In the shorter term, the loss of vegetation has resulted in increased runoff into waterways. Soils are naturally hydrophobic (water resistant) and this can be influenced by flood intensity and the amount of destruction of the surface litter layer. In the medium term, as vegetation slowly re-establishes, there will be a decline in water yield as more water is taken up by the younger and more rapidly growing plants. Given the extent of the 2006/07 bushfires, this medium-term reduction in water yield can be expected to have significant impacts on downstream environments and users of major streams, including the Gippsland Lakes, and water users such as irrigators in the Macalister Irrigation District. In the short-term, water quality will be very poor, as evidenced by the water supply problems with many Gippsland towns going to Stage 4 water restrictions.

Increased erosion

The loss of vegetation cover and the subsequent exposure of bare earth, coupled with the construction of fire control lines, will continue to result in increased soil erosion, particularly where slopes are steep and revegetation is slow. In some instances, the natural hydrophobicity of the soil surface can be destroyed by the heat of the fire while the sub-surface soils retain their hydrophobicity. This can potentially result in mass movement of the surface soil layer as the surface soil becomes saturated and the water cannot penetrate the sub-surface. The lack of vegetative cover will also increase run-off rates from rainfall, increasing the erosive potential of even small rainfall events. Significant amounts of topsoil and the seedbanks they contain will be washed from the slopes of the Gippsland uplands and deposited in waterways and on downstream floodplains.

In some areas, significant geomorphological changes are occurring, with whole gullies being stripped back to bedrock. There will also be an increase in in-stream erosion, as sediment and debris accumulations redirect flows into stream banks and initiate headward erosion. This will necessitate control measures such as rock beaching and the construction of grade control structures in critical areas, particularly around asset protection.

Increased debris

Leaves, twigs, branches and trees have been carried into waterways and are moving downstream. This poses a risk to water quality as the litter decomposes, depleting oxygen levels and increasing the risk of fish kills. Where in-stream debris builds up, there is a major risk to infrastructure such as bridges, and increased potential for stream avulsions (breakaway streams forming new courses) and stream bed instabilities. By deflecting flows into streambanks, debris build-ups also leads to increased in-stream erosion.

Increased sediment

Increased erosion leads to large amounts of sediment being deposited in waterways and on floodplains. Sedimentation reduces habitat for fish, aquatic invertebrates and amphibians and interferes with the breeding behaviour of a number of species. Sedimentation can also lead to changes in stream form through filling of pools and redirection of flows. High levels of sediment also impacts on the quality of water for both urban and rural water supplies. There will be a continuing need to cart urban water supplies to some towns, particularly after heavy rainfall in the catchments.

Degraded water quality

In addition to sediment, water quality issues such as depleted oxygen levels and increased nutrients will cause major problems to downstream receiving environments. Oxygen depletion, caused mainly by the decomposition of vegetative matter, can cause fish kills and adversely impact other fauna. Increased levels of nutrients can lead to algal blooms in downstream receiving environments such as the Gippsland Lakes, (EG & WG CMAs, 2007). Other water quality parameters, such as pH, will also be affected.

Destroyed fencing and revegetation works

Areas of fenced revegetation works were destroyed by the floods on public and private land. This included riparian fencing and revegetation undertaken by the CMAs, as well as Landcare and other revegetation works on private land. Part of the funding will be used to replace destroyed or damaged environmental revegetation works.

Increased weeds

Floods create niches in the landscape in which weeds can prosper and extend their range. This applies across the whole landscape but is a particular problem along waterways, which provide regular moisture and an environment amenable to weed growth. In particular, it can be expected that common riparian weeds, such as blackberries and willows will fill the voids left by the floods. However, the fires have made access to most of our waterways possible for the first time in decades meaning that with a concerted effort, many of these weeds can be eliminated from significant reaches. Weed control activities will be undertaken in close consultation with relevant land managers, including DSE, Parks Victoria and private landowners. Activities to manage these impacts commenced soon after the floods and will continue as required over the next two years.

OBJECTIVES AND STRATEGIES

Improve protection of riparian vegetation along streams and watercourses

- Repair or replace boundary fencing along strategic waterways by June 2008.

Protect river health from sediment

- Assess and prioritise works by 30 June 2008.

Minimise weed re-establishment and invasion of new weeds in high value waterways

- Undertake weed management activities in conjunction with adjoining landowners by 30 June 2008.

2.4 INDIGENOUS & POST-SETTLEMENT RELATIONSHIPS & HERITAGE

2.4.1 Indigenous cultural relationships and heritage

Through their rich culture, indigenous Australians have been intrinsically connected to this continent for tens of thousands of years, including the area now know as Victoria and the state's parks, reserves and other Crown lands. Parks Victoria and DSE recognise this connection and acknowledge the traditional owners of these areas affected by the floods and further acknowledge their right to primacy to speak for 'Country'.

The flood affected area is part of 'Country' of the Gunai-Kurnai, Bidawul, Monero-Ngarigu, Jaimathmathang and Wurundjeri peoples. Parks Victoria and DSE also respect the links and contributions from other indigenous communities and individuals and those maintaining a custodial cultural role.

Indigenous cultural heritage includes a broad range of places and values. It is critical to recognise that not all sites and places are physical and that many are part of people's spiritual beliefs and connections to 'Country'. Connection is to the whole of the environment including landscape, landform, flora and fauna. Indigenous peoples may have totemic associations, spiritual connections and cultural obligations to care for 'Country'.

This connection extends well beyond the values associated with pre-contact cultural sites such as artefact scatters and scarred trees. It encompasses the notion of speaking for, caring for, and healing of 'Country', (PV, 2005). Bound into this connection is an interest in ensuring that cultural knowledge helps to shape land management programs including flood recovery, (PV, 2006).

There are many registered indigenous cultural sites that occur within the flood affected area. These sites comprise grindings, indigenous places, sub-surface scatters, scar trees, mounds, artefact scatters, middens and burial sites. In the Alpine 2003 fires some 350 additional sites and places of significance were recorded, including some cultural sites covering many hectares and hundreds of metres long. It is likely that this will also occur as a result of the recovery work required following the 2006/2007 fires and in this post flood recovery.

Impacts of the flood on indigenous cultural sites include the exposure of sites previously hidden by soil and vegetation, the partial or complete destruction of sites by erosion and the burial of sites by silt and other debris.

All post flood recovery works, including environmental and assets, tree risk assessments, road, track and flood break restoration works have the potential to disturb and/or damage sites and places and must be carried out in accordance with traditional owner guidance and recommendations and relevant legislation (both state and federal), including *Native Title Act* 1993 requirements, particularly the Future Acts Regime. All projects must be assessed in accordance with the regime and in compliance with Parks Victoria's policy framework, particularly relating to native title consultations and notifications.

The likelihood of unrecorded indigenous sites throughout the flood affected area is very high. These may include river flats, terraces and spurs leading to rivers, which were used as major camp areas by aborigines. Prominent ridges and spurs that were part of travelling routes may also be affected where the flood and fire area overlaps. It is unlikely that sites will be situated on steep slopes, however care needs to be taken as sites near ridges may have slid downslope with the significant water and soil movement associated with the intense rain event. It must be recognised that not all sites and places will be readily visible. Some may only be observed from the air due to their scale and size, while others may be men's or women's places and therefore not observed. The latter point clearly indicates the need to ensure gender balance in cultural heritage teams.

The additional disturbance and increased visibility of sites created by the flood has created a unique opportunity for traditional owners and other members of the indigenous community to advise PV and DSE on their 'Country' and reconnect with the sites and places they wish to have recorded for future management. A post flood survey would enhance the post fire survey and include recommendations for site protection, rehabilitation, interpretation (if desirable) and ongoing management in partnership with PV and DSE. Any post flood survey should initially focus on known sites and predicted sensitive zones and zones where other works (for example environmental or visitor/assets) are being carried out, to ensure that impacts are avoided. It is also an opportunity to better understand, recognise and respect the ancient yet living indigenous cultural heritage of this 'Country'. Post flood surveys will ensure that sites can be better managed and protected in the future and increase our understanding of how indigenous people lived in a shared way with 'Country'.

OBJECTIVES AND STRATEGIES

Recognition of traditional owners and their elders

- Establish a flood component within established partnerships between traditional owners, their elders and management agencies and input into all aspects of recovery provided by 30 June 2008.

Foster relationships and knowledge exchange

- Establish good communication and exchange of ideas and values between traditional owners, PV, DSE, AAV and other indigenous communities for implementing the whole of fire, flood and storm indigenous recovery program by 30 June 2008.

Prevent damage to indigenous sites and places during recovery work

- Ensure that restoration works do not damage indigenous cultural sites and conform to relevant Acts, regulations and policies.

Protect indigenous sites and places

- Survey known sites and other areas where unknown sites are likely to occur.
- Assess and implement works to protect these.

Develop more complete picture of archaeological record of indigenous sites

- Identify indigenous archaeological sites and places not yet recorded by 30 June 2008.

2.4.2 Post settlement cultural heritage

The corridors along the rivers and tributaries of the flood zone and the broader flood affected area contain a number of sites and places associated with early European exploration, mining, settlement, agriculture and sawmilling.

Although many historic places have been recorded within the flood affected area, few have been damaged in the flood/storm event. The risk to heritage places from flood depends on the intensity of the flooding and whether the rainfall or floodwaters were likely to impact on the integrity of structures. Historic places affected by the floods include huts, mines, timber tramways, bridle trails and miners' walking tracks, bridges, arboreta, sawmill and township sites, graves and cemeteries. Sites within the flood affected area are considered to be of National or State significance.

The intrinsic value of heritage places is in their ability to tell the story of our past. As such, their authenticity is of critical importance, even when incomplete. When severely damaged or destroyed, there is generally limited value in their reconstruction, however whatever remains still has the ability to inform us greatly about our heritage. The risks following flood are therefore further loss of original fabric and setting due to instability of the objects or the surrounding environment, and the attraction of pilfering of movable objects by fossickers due to increased exposure and access.

The vast bulk of heritage features involved in the flood area comprise remnants of the mining and forestry industries, largely in the form of archaeological sites. These include, mine shafts, costeans, mullock heaps and other modified landforms. Conservation activity at such sites would include stabilisation of fabric at risk of further collapse or movement, clearing them of mud and other debris resultant from post flood washout, removal of threatening trees and, in certain instances, some reassembly of dislodged components. The provision of markers or protective devices at places such as newly exposed mine shafts may also be required, as well as signage aimed at protecting the sites from vandalism.

Such conservation works needed to restore or ensure the future protection of historic values, would require surveys of the sites and preparation of conservation prescriptions by heritage professionals to determine the specific requirements in each case for recovery.

OBJECTIVES AND STRATEGIES

Assessment of flood impact on known post-settlement sites

- National and State significant sites will be assessed to determine their sensitivity to disturbance by flood.

Protect priority post-settlement sites

- Heritage Action Plans will be prepared and conservation works implemented for priority post-settlement sites by 30 June 2008.

2.5 COMMUNICATION AND COMMUNITY ENGAGEMENT

When communities are faced with natural disasters such as the Gippsland floods, the impacts can be significant and the effects long lasting. These communities need support in managing their immediate needs and addressing the longer term issues. Community recovery is primarily the responsibility of the Department of Human Services, and is managed through the Municipal Recovery Managers. The Department of Sustainability and Environment and Parks Victoria assist this process through the provision of flood and environmental information, on ground works and in the timely reopening of sites.

A communications strategy has been developed to consult and collaborate with communities on decisions, future directions and messaging post flood. The strategy highlights the need to inform the community about flood in the environment and to increase their capacity to understand and contribute to flood management planning decisions. The size and complexity of issues relating to the Gippsland floods, and the connection to broader environmental issues such as climate change and fire events, represent a unique opportunity to deliberately engage the community in learning about the recovery of the environment and implications for the future.

Community engagement has already occurred during the recovery period as part of the re-opening strategy, including community meetings, and ongoing discussions with the Indigenous Reference Group. For example, the impact of these floods provides significant opportunities for traditional owners and other indigenous communities to get back on 'Country' and work in partnerships with agencies and the broader community in healing and caring for 'Country'.

The key priority is communication and interaction between government agencies, local communities and key stakeholders regarding flood and flood recovery works. Community engagement is a core business component of government agencies, and as such is a critical component of recovery projects.

OBJECTIVES AND STRATEGIES

Maintain and foster relationships

- Maintain and foster relationships between PV and DSE staff and local communities through appropriate forums by 30 June 2008.
- Promote the role of the community in flood recovery by 30 June 2008.

Engage stakeholders in recovery processes, achievements and activities

- Support recovery teams to manage community and stakeholder relationships and engagement activities.

Communities adjust to the new landscape

- Measure community attitude to flood and public land management by 30 June 2008.

2.6 COMMUNITY AND TOURISM RECOVERY

The tourism industry is a key sector in the economy of Gippsland and provides significant employment and economic benefits to local communities of the region. The Gippsland floods occurred during the winter when visitation is normally at a lower level, however it was unfortunate timing as the event occurred just prior to the mid year school holiday period when many tourism operators would have been seeking to recover from the fires over summer.

The floods and storm impacted on business across the region from the alpine areas, down the catchments to the coastal towns. The economic and social effects were most evident in the coastal towns where sandbagging efforts were in full force trying to hold flood waters from entering properties and range of businesses including petrol stations, supermarkets, newsagents, camping shops, boarding kennels etc. These businesses have also felt the reduction in visitor numbers to their townships and many were flooded out and had to wait several days for flood waters to recede before restoring their properties.

The floods also impacted on tourism outside the flood areas with road closures restricting traffic flow through the affected areas either side of Gippsland. Considerable revenue was lost with tourists choosing to take their holidays in other destinations or cancel existing bookings.

Many popular visitor sites in parks and forest were damaged or impacted through flooding. The tourism industry has had input into re-opening these areas through workshops and feedback forms. The impact was reduced due to the timing but continuing restrictions on access, particularly in the fire area, will begin to emerge as the 2008 summer holiday period approaches.

Licensed tour operators (LTOs) who rely upon National Parks and State forest areas were unable to operate their businesses during this period. Outside of the fire area and seasonal track closures, many of the access roads, tracks and visitor sites have already been re-opened. The loss of natural attractions that these operators depend upon has been kept to a minimum and has facilitated normal use of parks and forest areas relatively quickly.
DSE and PV responded by employing some LTOs after the flood to assist with recovery and re-opening areas.

Local communities need support to revive their townships and attract people back to the region to support their communities. 'Destination Gippsland' received $1.75 million after the fires, which is primarily assigned to tourism marketing. The tourism recovery strategies outlined here look at short and long term goals to provide immediate assistance and to assist in building the tourism potential of affected communities. DSE and Parks Victoria will support tourism through normal business processes.

OBJECTIVES AND STRATEGIES

Promote the local tourist industry

- Work with state-wide and local tourism bodies to promote park and forest re-openings through advertising and media throughout flood recovery (2007-2008).

- Promote local destinations at key events through PV/DSE attendance throughout flood recovery (2007-2008).

Support flood-affected communities to undertake local events

- Support local community events by providing display materials, stands and in-kind marketing support (2007-2008).

- Assist tourism marketing bodies to identify events and activities (eg Inspired by Gippsland) that can be supported through flood recovery funding (2007-2008).

3. IMPLEMENTATION

To ascertain that the recovery priorities for each asset or value are implemented, panels of specialists (collectively named 'theme teams') have been formed with management responsibility for planning, implementation and reporting on specific projects related to their subject area. In many cases these experts have been sourced from a range of organisations including DSE, PV, DPI and CMAs. To ensure governance and integration across projects, the Project Control Board oversees the implementation in the flood affected area. In many cases, projects have been given to organisations to manage across all categories of public land, but reporting is still via the Project Control Board.

Depending on the values and the projects, implementation will range from on-ground works delivered within specific geographic areas, to monitoring and assessment across the broader flood area.

Many of the recovery projects will be implemented in a Whole of Public Land program. This will ensure optimum efficiencies are obtained and the most effective program will be delivered.

Based on the funding allocated to each project, implementation and works will occur across the 2007/08 business year.

4. REPORTING AND REVIEW

The Department of Sustainability and Environment, Parks Victoria and the West Gippsland and East Gippsland Catchment Management Authorities will report on the implementation of actions of this plan undertaken to rehabilitate the disturbance from flood rehabilitation and flood recovery. The actions will be assessed at three levels:

- Efficiency of implementation of the actions in the plan including completion of the actions within the agreed timelines;
- Effectiveness of actions in managing flood-exacerbated threats using established monitoring programs designed to measure performance;
- Outcomes for values at key sites.

This reporting framework will identify whether there are ongoing issues or emerging threatening processes (eg weed invasion) that may need to be addressed by follow up programs.

Reporting will be completed by December/March and June each year and the Project Control Board will review outcomes in autumn each year.

5. REFERENCES

DSE (2006a), *Code of Practice for Fire Management on Public Land, Revision No.1 February 2006*, Department of Sustainability and Environment, Melbourne.

Department of Sustainability and Environment & Parks Victoria (2008), *Great Divide Fire Recovery* Plan. Stream Solutions, Melbourne.

East and West Gippsland CMAs (2007).*Gippsland Floods June 2007 - Report on Flood Impacts in Gippsland Rivers, August 2007*. Catchment Management Authorities, Bairnsdale.

Parks Victoria V (2005). *Indigenous Partnerships Strategy and Action Plan, July 2005.* Parks Victoria, Melbourne.

Parks Victoria (2006), *Grampians National Park Fire Recovery Plan*, Parks Victoria, Melbourne.

Standards Australia Ltd (2004). *ASA5100.1-2004 Bridge Design – Scope and general principles*. SAI Global, New South Wales.

Standards Australia Ltd (2004a). *AS/NZS 4360: 2004. Risk Management*. SAI Global, New South Wales.

APPENDICES

Appendix 1 – Flood event summary from the Bureau of Meteorology

Station	Flood Class Levels			27-29 June 2007 Event				Past Flood Events	
	Minor	Moderate	Major	Date and Time	Peak Height (m)	Peak flow (Ml/d)	Flood Class		
Latrobe River									
TRARALGON TOWN	3.5	4.0	4.5	28/06/2007 05:06	4.83		Major		
ROSEDALE FLD	4.0	4.8	5.5	03/07/2007 08:52	3.95		Minor		
Avon, Macalister, Thomson									
LICOLA	2.0	3.3	4.0	got to 3.89 m and stopped working, largest on record			Major		
LAKE GLENMAGGIE D/S	7500	22000	35000	28/06/2007 10:00		147,000	Major		
U/S COWWARR WEIR	3.7	4.5	5.5	28/06/2007 03:32	7.59		Major	Apr-90	7.04
WANDOCKA	6.2	6.5	6.7	28/06/2007 10:19	6.74		Major	Jun-78	6.78
SALE WHARF	2.4	3.0	4.0	29/06/2007 05:00	4.23		Major		
THE CHANNEL	5.0	6.9	7.5	27/06/2007 20:12	9.57		Major	Apr-90	11.22
STRATFORD	4.5	6.0	6.5	28/06/2007 00:51	8.86		Major	Apr-90	9.00
Mitchell									
GLENALADALE	3.0	4.5	5.5	28/06/2007 11:41	8.22		Major	Jun-98	7.92
ROSEHIL				28/06/2007 16:40	8.89		N/A		
BAIRNSDALE FLD	4.0	5.5	6.5	28/06/2007 17:00	7.66		Major	Jun-98	7.75
Snowy									
MCKILLOPS BRIDGE	2.5	6.0	8.0	29/06/2007 03:08	4.43		Minor		
BUCHAN FLD	2.5	3.5	4.0	29/06/2007 08:30	3.74		Moderate		
BASIN CREEK	3.5	5.5	6.6	29/06/2007 08:42	6.35		Moderate	Jun-98	6.81
JARRAHMOND	3.9	6.2	7.4	29/06/2007 11:44	7.71		Major	Jun-98	9.06
ORBOST FLD	4.0	6.0	7.0	29/06/2007 21:23	6.98		Moderate	Jun-98	7.85
Cann and Genoa									
CHANDLERS	2.0	2.3	2.8	28/06/2007 23:41	2.23		Minor		
THE GORGE	2.0	2.5	3.0	28/06/2007 20:38	2.53		Minor		
WEERAGUA	2.5	3.6	4.4	29/06/2007 00:06	2.45		Minor		

Appendix 2 - Key legislation & policy with specific provisions related to flood

Acts	• Native Title Act 1993 • Forests Act 1958 • National Parks Act 1975 • Reference Areas Act 1978 • Heritage Rivers Act 1992 • Victorian Heritage Act 1995 • Catchment and Land Protection Act 1994 • Aboriginal Heritage Act 2006 • Flora and Fauna Guarantee Act 1988
Codes	• Code of Practice for Fire Management on Public Land 2006 • Code of Practice for Timber Production 2007
Strategies	• Parks Victoria's Indigenous Partnerships Strategy and Action Plan 2005
Plans	• Alpine National Park Management Plans (Wonnagatta-Moroka, Cobberas-Tingaringy, Darmouth & Bogong Units) 1992 • Central Highlands Forest Management Plan 1998 • Forest Management Plan for Gippsland 2004 • East Gippsland FMA – Forest Management Plan 1995
Supporting Commonwealth legislation	• Environment Protection and Biodiversity Conservation Act 1999

Appendix 3 - Objectives and Projects for the Flood / Storm Recovery Program

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08	
1. VISITOR SERVICES - ($6,600,000)				
Total funding (black); PV; DSE			**Parks Victoria**	**DSE**
Restore visitor access	Provide public access to major visitor sites by 24 December 2007.	• Clear vehicle roads, walking tracks and visitor sites of fallen debris, clear drains, grade roads, assess and mitigate dangerous trees and other risks in accordance with the priority of the re-opening strategy by 24 December 2007.	$2,100,000	$2,200,000
	Re-establish the permanent road network by 30 June 2008.	• Repair roads and road infrastructure severely damaged by the flood including the Tamboritha Road and the Timbarra Bridge by 30 June 2008.		
	Restore Rail Trail access for Gippsland Plains and East Gippsland	• Remove debris and repair trail surface, replace surfacing material where removed by flood. • Repair or replace bridges and other structures to ensure safety and compliance with engineering standards.	$500,000	
	Develop a Re-opening Strategy for Gippsland's public land in consultation with the community, key stakeholders and Licensed Tour Operators by 30 September 2007.	• Develop a Re-opening Strategy for Gippsland's public land in consultation with the community, key stakeholders and Licensed Tour Operators.		
		Subtotal	$2,100,000	**$2,700,000**
Repair or replace recreational and tourist built assets	Restore beach access along 90 Mile Beach including assessment of shoreline hazards by 30 June 2008.	• Assessment and repair of seawalls and breakwaters. • Assess shoreline at four major erosion sites and minimise hazards to swimmers and boaters.		$1,000,000
	Restore functioning of boating capability within Gippsland Lakes by 30 June 2008.	• Support Gippsland Ports to re-establish their full capability by 30 Sept 2007.		
	Restore the walking track network by 30 June 2008.	• Restore walking tracks and associated infrastructure severely damaged including the Sale Common and Mitchell River walking track.	$400,000	$400,000
	Assets replaced fit for purpose, consistent with sustainable principles and fully compliant with relevant standards by 30 June 2008.	• Compile list of damaged assets on public land. • Undertake planning and design to replace assets in accordance with priorities. • Complete repair and replacement program.		
		Subtotal	**$400,000**	$1,400,00
		TOTAL	**$6,600,000**	

Appendix 3 - Objectives and Projects for the Flood & Storm Recovery Program

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08	
2. NATURAL VALUES - ($1,300,000)				
Total funding (black); PV; DSE			**Parks Victoria**	**DSE**
Protect high value biodiversity assets from high to extreme risks **(mitigate risk)** Σ	Assess high priority terrestrial & aquatic fauna populations at risk of local extinction from threatened habitat by 30 June 2008 and implement remedial work.	• Determine the impact of the flood on significant aquatic invertebrates (#2.1); • and vertebrates including Dwarf & Mountain Galaxias and Australian Grayling (#2.2); • and amphibians (#2.3) and implement recovery programs as required.	$100,000	$100,000
	Reduce immediate negative impacts on high value ecosystems by 30 June 2008.	• Determine impact of floods on alpine mossbeds across all tenures (#2.4) and implement structural restoration actions with areas fire and flood affected as a priority (#2.5) (add to existing fire programs). • Rehabilitate and reduce immediate risks to threatened EVCs including Dry Valley Forest, Riverine Escarpment Scrub, CTR, (#2.6) and Deep Freshwater Marsh including protection of significant geomorphological features (#2.7). • Restore hydrology regulation structures at McLeods Morass.		
Improve understanding of the impact of the flood and storm event on biodiversity **(monitor risk)**	Impacts of flood and storms on key populations and/or habitat of flora and aquatic organisms, amphibians, mammals and reptiles assessed by 30 June 2008.	• Review fire program where floods are likely to have exacerbated the impacts and if required provide additional support. • Surveys to confirm presence/persistence of priority threatened plant populations (#2.8). • Undertake surveys of threatened fauna including Smoky Mouse in Aberfeldy and Wonnangatta catchments (#2.9) [cross tenure project DSE lead].		
Minimise the risk associated with established and new and emerging weeds **(reduce risk)**	Identify key priorities for dealing with weeds, and prioritise high value habitats and vegetation communities for weed control by June 30 2008.	• Eradicate new and emerging weeds from priority areas in the Mitchell, Thompson, and Avon catchments including tributaries and alpine bogs in their headwaters (#2.10). • Reduce the threat of established weeds impacting on key values in priority areas in the Mitchell, Thompson, and Avon catchments including tributaries and lakes that reached major flood levels. (#2.11) – identified threats include Blackberry, Bridal creeper, Periwinkle and willows in riparian areas; and Paterson's Curse, Gorse and Oxeye Daisy in upper catchment areas.	$300,000	$300,000

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08	
Minimise the risk associated with predators and introduced grazers on high value fauna and flora **(reduce risk)**	Reduce immediate negative impacts on high value fauna and flora through pest animal control by 30 June 2008.	• Decrease the impacts of pest animals including grazing by exotic herbivores (rabbits, hares, deer, pigs, goats and feral horses) on significant values within the major flood affected area (#2.12). • Undertake monitoring of the impacts of by exotic herbivores on regenerating threatened flora and EVCs following the flood event (#2.13). • Reduce the increased threat of predation by foxes and cats to significant fauna within the flood affected areas.		
Minimise pest plants and animals along the public/private land interface **(reduce risk)**	Work in partnership with adjacent landholders to undertake predator control and to identify and control weed sources on public land by June 30 2008.	• Decrease the cover of weeds dispersed by the flood event in interface areas including Willow and other pest plants. • Undertake surveillance and treat new and emerging weeds along interface areas. • Manage rabbit, hare and fox populations and other pest animals along the interface.		
Improve protection of riparian vegetation along streams and watercourses	Repair or replace boundary fencing along strategic waterways by 30 June 2008.	• Re-establish boundary fencing along the Buchan River. • Re-establish fencing along the Mitchell River.		$500,000
		Subtotal	**$400,000**	**$900,000**
		TOTAL	**$1,300,000**	

Appendix 3 - Objectives and Projects for the Flood & Storm Recovery Program

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08	
3. PROTECTION OF CATCHMENTS AND WATERWAYS - ($10,000,000)				
Total funding (black)			**WGCMA**	**EGCMA**
Repair or Replace CMA assets	Assess and rebuild assets by 30 June 2008.		$6,000,000	$4,000,000
Protect river health from sediment	Assess and prioritise works by 30 June 2008.			
Minimise weed re-establishment and Invasion of new weeds in high value waterways	Undertake weed management activities in conjunction with adjoining landholders by 30 June 2008.			
		TOTAL	**$10,000,000**	

Appendix 3 - Objectives and Projects for the Flood & Storm Recovery Program

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08	
4. INDIGENOUS AND POST SETTLEMENT HERITAGE - ($300,000)				
Total funding (black); PV; DSE			**Parks Victoria**	**DSE**
Recognition of traditional owners and their elders	Establish flood component within partnerships established between traditional owners, their elders and management agencies and input into all aspects of recovery provided by 30 June 2008.	• Work in partnership with the Taungerung, Gunai-Kurnai, Kurnai, Dhudroa, Wurundjeri, Monero-Ngarigu, Jaimathmathang and Mitambuta peoples and their elders and agencies. • Ensure involvement of traditional owners and elders in the recovery program through the Victorian Alps Indigenous Reference Group.	Conducted through Fire Recovery Program	
Foster relationships and knowledge exchange	Good communication and exchange of ideas and values between traditional owners, PV, DSE, AAV and other indigenous communities for implementing the whole of fire, flood and storm Indigenous recovery program by 30 June 2008.	• The Victorian Alps Indigenous Reference Group to provide collaboration and steering of fire, flood and storm Indigenous recovery program.	Conducted through PV's Indigenous Partnership Program	
Prevent damage to indigenous sites and places during recovery work	Instigate whole of recovery process for works procedures in relation to cultural sites by 30 Sept 2007.	• Develop a consistent process for approving works that ensures cultural sites are protected and conform to the relevant Acts and legislation.	$200,000	
Protect known indigenous sites and places	Confirm presence of sites and establish protection and management measures by 30 June 2008.	• Undertake an integrate fire, flood and storm damage indigenous archaeological surveys utilising traditional owners. • Implement a program of works to protect, maintain and where appropriate interpret indigenous cultural values with traditional owners and scheduled communities/RAPs. • Indigenous representatives involved in planning and implementation of all site works.		
Develop more complete picture of archaeological record of indigenous sites	Identify Indigenous archaeological sites and places not yet recorded by 30 June 2008.	• Undertake post-flood indigenous archaeological surveys utilising traditional owners		
Protect post-settlement heritage	Assess and protect post-settlement heritage by 30 June 2008.	• Assess post-settlement heritage for evidence of erosion, exposure and instability. • Protect sites or remove vulnerable materials.		$100,000
		Subtotals	**$200,000**	**$100,000**
		TOTAL	**$300,000**	

Appendix 3 - Objectives and Projects for the Flood & Storm Recovery Program

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08	
5. COMMUNICATION AND COMMUNITY ENGAGEMENT - ($300,000)				
Total funding (black); PV; DSE			**Parks Victoria**	**DSE**
Maintain and foster relationships	Communicate the reopening strategy to general community, key stakeholders and relevant government authorities by the 25 December 2007.	• Engage stakeholders regarding priorities for public access and incorporate into Public Land Reopening Strategy by 1 December 2007. • Develop and publicise Public Land Reopening Strategy on ParkWeb monthly. • Continue to update and publicise Public Land Reopening Strategy - responding to new and changing stakeholder expectations.	Community Engagement is an essential component of all Flood Recovery Themes. Community Engagement and will be supported through all themes. Opportunities will be sought and funded through each individual projects within each theme.	
	Maintain and foster relationships between parks and forest staff and local communities by 30 June 2008.	• DSE and PV staff attend and support community recovery and rehabilitation events. • Work with the community to build and maintain partnerships that support broader community recovery.	$0	$300,000
Engage stakeholders in recovery processes, achievements and activities	Promote the role of the community in fire and flood / storm recovery by 30 June 2008.	• Recovery Officers will actively collaborate with Shire Recovery officers around community recovery opportunities. • The community will be encouraged to share their experiences through participation in community events. • Identify and encourage participation from the Gippsland community and key user groups in recovery and monitoring activities such as wildlife surveys and tree planting field days. • Work with the community to build their capacity to engage with flood, storm management on public land.		
	Support recovery teams to manage community relationships and engagement activities.	• Employment of Recovery Engagement Officers to complement fire recovery work. • Produce and disseminate informative recovery stories through Regional Recovery Newsletters, INFORM, Gippsland News and Views, media outlets, Bushy Tales, Newsflash and Fireweb. • Produce FAQs and fact sheets that support appropriate forest use during forest and park rehabilitation and regeneration phases in the combined fire, flood and storm affected areas state-wide. • Develop and implement a communications plan for the Flood Recovery Program that addresses each theme.		

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08
Communities adjust to the new Landscape	Support recovery teams to manage stakeholder relationships and engagement activities	• DSE and PV representatives will participate and report on recovery activities at regional and local stakeholder forums and Regional Recovery Working Groups. • Presentations produced to support engagement with key stakeholders and community groups and updated and circulated to key personnel in both regions regularly. • Deliver combined fire, flood and storm recovery information sessions to key stakeholders. • Develop and implement an appropriate communications plan for each theme.	
	Measure community attitude to fire, flood, storm and Public land management by 30 June 2008.	• Survey local residents and forest and park users	
		TOTAL	**$300,000**

Appendix 3 - Objectives and Projects for the Flood & Storm Recovery Program

Objectives	Strategy (SMART rule)	Project (Place Based)	Budget 07/08	
6. COMMUNITY AND TOURISM RECOVERY - ($1.5 million)				
Total funding (black); PV; DSE			**Parks Victoria**	**DSE**
Promote the local tourist industry	Work with state-wide and local tourism bodies to promote park and forest re-openings through advertising and media throughout combined fire, flood and storm recovery (2007-2008).	• Maintain local tourism capacity through Licensed Tourist Operator Employment Scheme (PV project). • Collaborate with Destination Gippsland Inc, Tourism Victoria, Great Alpine Road Marketing and local tourism bodies in their recovery strategies.	Funded through other Bushfire Recovery Themes Funded through normal business activities	
	Promote local destinations at key events through PV/DSE attendance throughout fire, flood and storm recovery (2007-2008).	• Attend Camping and Caravan Show, Boat Show, Wandin 4WD Show etc.	Funded through normal business activities	
Support flood-affected communities to repair and restore flood affected community Infrastructure	Remove flood debris from land and structures managed by local residents through Committees of Management.		$0	$1,500,000
	Facilitate repair or replacement of community infrastructure on Crown Land managed by local residents through Committees of Management.			
Support fire-affected communities to undertake local events	Support local community events by providing display materials, stands and in-kind marketing support (2007-2008).	• Check local calendar of events to be developed by community engagement group.	Funded through normal business activities	
	Assist tourism marketing bodies to identify events and activities (e.g. Destination Gippsland) that can be supported through flood/storm recovery funding (2007-2008).	• Produce combined Recovery brochures and signage (including self drive brochures) for priority areas that include the impact of the fire, flood and storm on sites and key messages about natural disasters.	Funded through other bushfire recovery themes	
		TOTAL	**$1,500,000**	

www.dse.vic.gov.au

www.parkweb.vic.gov.au